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By- Slobin, Dan I.

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A contribution to the debate on innate factors in children's language acquisition is rendered by cross-linguistic comparisons of children's languages. Russian, for example, is sufficiently different from English to serve as a useful contrast. Early syntactic development is very much the same in both languages. A small class of "pivot words" and a larger open class of words are used first. Word order is quite inflexible at each of the early stages of syntactic development. Two-word sentences appear at about 1:8 (1 year, 8 months); three- or four-word sentences appear at about 1:10. Morphological markers enter with the three- and four-word sentences. The learning of morphology goes on longer than the learning of syntactic patterns. A major Russian work on language development contends that the Russian child does not master his morphology until several years beyond the age at which the American child completes his primary grammatical learning. This factor suggests that it may be more difficult to learn to speak one language natively than another, although in both, basic learning is accomplished rapidly. (WD)

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Grammatical Development in Russian-Speaking Children

Dan I. Slobin

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The striking recent advances of developmental psycholinguistics have been based on careful study of the acquisition of English as a native language. The engrossing debate in regard to innate factors in language acquisition however (McNeill, in press) may be illuminated by cross-linguistic comparisons of child language. Unfortunately, extensive data on the acquisition of non-Indo-European languages are not yet available; there is, however, a sizeable Soviet body of literature which is worthy of the attention of American psycholinguists. Although Russian is also an Indo-European language, it is sufficiently different from English--most clearly in its highly inflectional grammatical structure--to serve as a useful contrast case to sharpen notions of universal aspects of language acquisition and linguistic competence.

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In order to make the discussion intelligible to a non-Russian-speaking audience, a few words about the grammatical structure of the language are in order. Russian has three genders and six cases; nouns, adjectives, and pronouns show gender, case, and number. Verbs are conjugated for person and number, and, in the past tense, also for gender of subject noun. Verbs are marked for tense (three tenses) and aspect (perfective-imperfective, and for verbs of motion, also determinate-indeterminate). There are many participial forms. The morphology is highly productive, and freely-used suffixes of many sorts abound (e.g. diminuitive, augmentative, endearing, pejorative, agentive, and so on). Word order is much freer than in English.

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The most careful and intensive longitudinal study of a child's language development ever published anywhere is probably the monumental work of Aleksandr N. Gvozdev (1961), a Soviet linguist and teacher. He kept a diary of the speech of his son, Zhenya, almost daily for the first few years of the child's life, and recorded his language extensively until the age of nine (1921-1929). The following discussion is based primarily on the speech of Zhenya, supplemented with data from psycholinguistic experiments with preschool children.

Early Syntax

The beginning stages of syntactic development look very much like those of English-speaking children described by Braine (1963a), Brown and Fraser (1963), and Miller and Ervin (1964). There is clearly a small class of "pivot words" (P) and a large open class of words (O), which can be combined into three types of two-word sentences: P + O, O + P, and O + O (McNeill, in press). Gvozdev argues that these sentences are constructed, rather than imitated or memorized as units, because most of the single words appear as separate utterances, and because the two-word combinations differ from adult sentences in form.

Two-word sentences appear at about 1,8; at first there are only a few such sentences, but they become the usual utterance type by 1,9. By 1,10 they are replaced in frequency by longer sentences. As has been noted by other investigators, new pivots are often playfully practiced, the child uttering long series of pivot sentences, holding the pivot constant and substituting a variety of words from the open class (cf. Weir, 1962). In line with American findings, membership in both pivot and open classes is heterogeneous from the point of view of part-of-speech membership in the adult language.

The first three-word sentence is a simple negation, which involves placing a negative element at the beginning of a sentence. This is the same initial negation form found by Bellugi (in press) though the adult model in Russian often involves a double negative. For example, the adult form nyet nikavó[1] ("not no-one"--i.e. "there is no one") is given by the child as nyet kavó. Nyet, dam is the child's equivalent of adult nyet, nye dam ("no, not I-will-give"). The same negative element, nyet, is used in all cases, even where the adult form would have only the single negative element nye: e.g. instead of nye karmí (don't feed), the child says nyet kamlí. Presumably, acoustic marking singles out nyet, rather than nye, as the primordial negative element. (It should also be noted that nyet is the independent negative element in Russian, analogous to English no.)

Another source of length is the addition of content words to short sentences. Gvozdev thinks that forms learned more recently appear later in sentences, and gives the example of elaboration of one-word utterances to two-word subject-object sentences, and, with the acquisition of new verbs, to subject-object-verb sentences, although subject-verb-object

order is dominant in Russian. For example, at the first stage the child may say mama; at the second, mama niska ("mama book"); and at the third mama niska tsitats ("mama book read") (The forms are all unmarked in the child's system, and Russian does not use articles.) This subject-object-verb order is at first the dominant order in the child's speech, being replaced by subject-verb-object at about 1,11. (It is interesting to note that according to Greenberg [1963], it is apparently a linguistic universal that subject precede object in the dominant actor-action construction of a language, and that the two most common patterns are SVO and SOV.)

Word order is quite inflexible at each of the early stages of syntactic development. One might have predicted that Russian children, being exposed to a great variety of word orders, would first learn the morphological markers for such classes as subject, object, and verb, and combine them in any order. This is, however, hardly the case. Child grammar begins with unmarked forms--generally the noun in what corresponds to the nominative singular, the verb in its adult imperative or infinitive form, and so on. Morphology develops later than syntax, and word order is as inflexible for little Russian children as it is for Americans.

Arguments have been advanced by Braine (1963b) and by Jenkins and Palermo (1964) which rely upon the ordinal sequences of words in adult language to account for the order of elements in child sentences, and for the formation of word classes. Not only do the Soviet data cast doubt on these interpretations, but, as Bever, Fodor, and Weksel (1965) have pointed out, even in English, which does not make great use of inflection, order is not as important a feature of syntactic structure as might be imagined. It is certainly a much less important feature in Russian, thus lending further support to the critique developed by Bever et al. There must be something in LAD, the built-in "language acquisition device" discussed by McNeill (in press) and others, which favors beginning language with ordered sequences of unmarked classes, regardless of the degree of correspondence of such a system with the input language.[2]

Later Syntax

I have not yet examined Gvozdev's work to determine what happens to syntactic patterns after this early level; his classification of sentence types is not always the most useful, and extensive effort would be required--and should be expended--to reorganize his data for other sorts of analysis. He contends that by age three almost all of the complex and complex-subordinate sentence types of adult Russian are present, and that the child knows all of the generic grammatical categories (case, gender, tense, and so on) and has a good idea of their meanings. No new uses of grammatical cases enter after 3,9. By contrast, the learning of morphology and morphophonemics goes on for very much longer. It takes until seven or eight to sort out all of the proper conjugational and declensional suffixes and categories, stress and sound alternations, and the like. The Russian child does not fully master his morphology until he is several years older than the age at which the American child is believed to have essentially completed his primary grammatical learning. In this sense, then, it may be more difficult to learn to speak one language natively than another--though the basic learning is accomplished very rapidly.

(This point cannot be properly evaluated, however, until we have more information about the grammar of English-speaking children between the ages of five and eight. Full mastery of the auxiliary system, the subjunctive, and quantifiers, for example, is quite late in American children. It is not yet possible to adequately compare the lateness of such accomplishments with the lateness of other sorts of accomplishments in Russian. The unanswered question is whether the speech of a Russian seven year old is heard as more deviant from adult speech than is the speech of an American seven year old.)

Morphology

Morphological markers enter when sentences increase from two to three or four words in length. All words are unmarked in Zhenya's speech until about 1,10, and then, in the one month between 1,11 and 2,0 there is a sudden emergence of contrasting morphological elements in various grammatical categories. In this one month, previously unmarked nouns are marked for: (1) number, (2) nominative, accusative, and genitive cases, and (3) past tense, and (4) present tense. Apparently once the principles of inflection and derivation are acquired--

or, at any rate, the principle of suffixing--the principle is immediately applied over a wide range of types.

There are many other examples of simultaneous emergence of a grammatical principle in several domains. For example, gender agreement appeared simultaneously both in regard to adjective-noun agreement and noun-past tense of verb agreement. When a new grammatical case enters, it serves several functions at once. A variety of prepositions enter within a short period, and are combined with nouns in various grammatical cases. One is struck by the rapidity with which a principle is suddenly applied to an entire domain--and to the correct domain.

(Note, by the way, that the Russian child has no apparent difficulty in discovering morpheme boundaries. From the very beginning of inflections one sees a free use of word stems combined with a huge variety of bound morphemes. The word stem is clearly a psychologically real unit.)

Overregularizations are rampant in the child's learning of Russian morphology--small wonder, with the great variety of inflectional categories, and with the additional great variety of forms within each category, determined on the basis of both sound and grammatical relations. For example, not only must the child learn an instrumental case ending for each masculine, feminine, and neuter singular and plural noun and adjective, but within each of these sub-categories there are several different phonologically conditioned suffixes. The child's solution is to seize upon one suffix at first--probably the most frequent and/or most clearly marked acoustically--and use it for every instance of that particular grammatical category. For example, Gvozdev's son Zhenya at first used the suffix -om for all singular noun instrumental endings, although this suffix is used only for masculine and neuter singular nouns. This suffix, however, has only one other function--a masculine and neuter prepositional case ending for adjectives. The corresponding dominant feminine singular noun instrumental ending, -oi, on the other hand, serves a variety of functions, being an adjectival suffix for four cases in the feminine and one in the masculine. Thus, although feminine nouns are more frequent in Russian child speech, Zhenya initially used the suffix of fewer meanings-- -om-- for all instances of the instrumental case. This clarifies

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Gvozdev's statement that grammatical are acquired earlier than morphological details. The child already possesses the category of instrumental case--and marks it accordingly--but it will take several years, perhaps, before he learns to correctly mark every instance of the instrumental in accordance with gender and with morphophonemic principles.

Large-scale research with preschoolers (Zakharova, 1958) has similarly revealed early stereotyped case endings for each case in a child's repertoire. Like Zhenya, Zakharova's subjects used the suffix -om as a universal instrumental, and -u as a universal accusative. These endings are of high frequency, clearly marked accoustically in adult speech, and limited in the number of functions they perform.

Zakharova also found that, as gender comes to be more important in classifying nouns, other additional endings for each case enter. They do not, however, peacefully coexist with the already established endings. When a child learns, for example, that -oi--the feminine noun singular instrumental ending--can also serve as a noun instrumental ending, he abandons the masculine and neuter instrumental, -om, which he has been using, and for a while uses -oi as a universal instrumental. Only later does -om re-enter to assume its place in standard Russian. Practice clearly does not insure the survival of a form in child speech--regardless of whether or not that form corresponds to adult usage (and, presumably, regardless of whether or not its usage by the child is "reinforced" by adults). (This is very similar to the development of the past tense in English, in which irregular strong forms, like did, are at first used correctly, only to be later driven out by over-generalizations from the regular weak forms, giving rise to transitory though persistent forms like doed.) Popova (1958) presents additional evidence of ontogenetic replacement of one suffix by another, finding that very young children overgeneralize the feminine past tense of the verb, and that older children overgeneralize the masculine.

As noted above, full mastery of the morphological system comes relatively late in Russian-speaking children. The distinction between mass and count nouns is not stabilized until age eight; the distinction between animate and inanimate nouns in the accusative is mastered only at four; gender agreement between nouns and verbs in the past comes at three, although agreement of number and person come a year earlier; declension of masculine and

feminine nouns ending in palatalized consonants is not mastered until six or seven. Soviet psycholinguists interpret the order and rate of acquisition of morphological classes in terms of the relative semantic or conceptual difficulty of various classification criteria

One line of evidence in this argument is the observation that lexical items referring to certain semantic categories appear at the same time as those categories become morphologically marked. For example, at 1,10, in Zhenya's speech, one finds the first use of the word mnogo (much, many) at the same time as the singular-plural distinction in noun markings. The words "right away" and "soon" enter at the same time as the future tense. And so on.

An attempt is made to set up the following order of acquisition of morphological classes in reference to their meanings:

(1) Those classes whose reference is clearly concrete emerge first. The first morphological distinction is number, at 1,10, followed shortly by diminuitive suffixing of nouns. The imperative, with its immediate, expressive character, also appears very early.

(2) Classes based on relational semantic criteria--cases, tenses, and persons of the verb--emerge later than those with concrete reference.

(3) The conditional is very late, not being used until 2,10, though its grammatical structure is exceedingly simple. Conditional subordinate clauses are also later, emerging at about 2,8. In both cases, it seems to be the semantic or conceptual, and not the grammatical aspect which is difficult for the child.

(4) Noun endings indicating abstract categories of quality and action continue to be added until as late as seven. The only derivational noun suffixes learned before three are those of clearly concrete or emotive reference--diminuitive and augmentative, endearing and pejorative.

(5) Grammatical gender is responsible for what is perhaps the most difficult and drawn-out linguistic learning of the Russian-speaking child, although it is almost always unequivocally marked phonetically. This is a category almost entirely lacking in semantic correlates, and apparently such correlates are an important aid in learning form-class distinctions. At first the child uses the feminine past tense ending for almost all nouns, regardless of their gender markings--even if he knows they are semantically masculine (e.g. papa). Later the child will use the masculine past tense for many nouns which are semantically feminine. The verb inflection is simply not treated as having semantic content. Likewise, the child will first use one stereotyped case ending for all nouns in that case, regardless of their gender (even if can correctly identify gender-class membership on the basis of pronoun substitution and adjective agreement).

The semantic and conceptual aspects of grammatical classes thus clearly play an important role in determining the order of their development and subdivision.

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(More detailed discussion of Soviet psycholinguistics and Soviet child language can be found in Slobin [in press] and references cited therein.)

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Footnotes

1. The transliteration is a very rough approximation to the sounds of Russian, and does not always match the Russian orthography.

2. It may well be that order is important in the "base structure" of Russian, thus supporting McNeill's proposal (in press) that children "talk base strings directly." The most economical representation of an inflected language like Russian would order the language in the underlying representation. Inflections could then be added to the characteristic positions of parts of speech, and an additional rule or rules would then re-order this string. All of the world's languages make use of order in their grammatical structure, but not all languages have morphological systems. It would be reasonable, then, for LAD to assume the language to be ordered, to adopt a given order as a first guess, and later learn that it can be changed. This interpretation, of course, minimizes the contribution of the linguistic input, suggesting that it is more important in providing tests for hypotheses about the organization of language than it is in acting as an observation base for inference.